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AUTHOR	Stoll, Clarice S.
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Both students and social scientists criticize the American educational system because (1) course content is not presented in a manner relevant to real-world situations and (2) course structures typically have characteristics that inhibit rather than promote individual motivation to learn. This case study describes a student-originated course entitled "Research and Its Relevance for Society." The speakers consisted of guest lecturers from throughout the university. The course format introduced atypical procedures into the curriculum: non-required reading, required attendance, minimal grading, no exams and unconventional written assignments. Student participation and interest was high. The success of the course suggests the need for additions to the standard undergraduate curriculum as well as a re-evaluation of our teaching methods and aims in standard courses. (Author)

THE JOHNS HOPKINS UNIVERSITY

REPORT No. 59

THE CENTER FOR THE STUDY OF SOCIAL ORGANIZATION OF SCHOOLS

THE NON-COURSE

INNOVATION IN THE UNDERGRADUATE CURRICULUM

BY

CLARICE S. STOLL

FEBRUARY, 1970

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The Johns Hopkins University
Baltimore, Maryland

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ABSTRACT

THE NON-COURSE: INNOVATION IN THE UNDERGRADUATE CURRICULUM

Both students and social scientists criticize the American educational system because (1) course content is not presented in a manner relevant to real-world situations, and (2) course structures typically have characteristics which inhibit rather than promote individual motivation to learn. This case study describes a student-originated course entitled "Research and Its Relevance for Society." The speakers consisted of guest lecturers from throughout the university. The writer served as course administrator, introducing atypical procedures: non-required reading, required attendance, minimal grading, no exams, unconventional written assignments. Student participation and interest was high. The success of the course suggests the need for additions to the standard undergraduate curriculum as well as a reevaluation of our teaching methods and aims in standard courses.

THE NON-COURSE: INNOVATION IN THE UNDERGRADUATE CURRICULUM

In an article on problems in American secondary education, Boocock and Coleman (1966) have noted several structural deficiencies in the organization of schools as learning environments. The most fundamental defect, they suggest, is that most teaching is not useful for understanding present day-to-day problems. Moreover, the rapidity of social change induces uncertainty as to whether the skills a student is acquiring will in fact ever be relevant. Boocock and Coleman propose that one reason for the low level of motivation among students is that they see little need to focus their energies upon skills of uncertain value.[1]

The second defect Boocock and Coleman identify is the rigid reward system that depends upon the performance of restrictive assignments and the passing of tests with fixed standards. There is little opportunity for students themselves to initiate learning activity. Related to this defect is the fact that the teacher has a dual role--teaching and evaluating. As judge of performance, a teacher may become the object of attitudes (e.g., hostility) which can interfere greatly with his effectiveness as a coach.

In an article damning typical practices in the graduate education of psychologists, Rogers (1968) has similarly argued that emphasis upon evaluation has resulted in an environment quite alien from one

suggested by established principles of learning. Repeated tests appear to be a ritual which permits little time for discovery and self-motivated learning. Teachers, as well as students, have become captives of the evaluation process. They hold informal norms that a certain delineated subject area must be covered within a semester, and that specific skills must be displayed by the students as proof of knowledge. These goals are complicated by the fact that evaluation methods, for reasons of efficiency and reliability, greatly restrict the type of learning that can be measured.

Another theme in the criticism of education is found in Herndon's (1968) case study of his teaching experiences in a ghetto high school. His sensitive journal reveals how order has become synonymous with learning. Classrooms are places where there is one "way it spozed to be:" quiet, disciplined, and perhaps most important, respectful of authority. Even the most superficial chaos is not acceptable. The basis of order must radiate from the teacher; the class should not be allowed to make extensive forays from the main outline of the curriculum.

Though none of these critics address themselves to undergraduate education, their observations are not unfairly applied to this setting. That there are problems with the undergraduate curriculum is indisputable. Students riot for "relevance," demanding that teachers face the pressing problems of our heterogeneous, technological, imperfect society. Some have organized "free universities" where it is possible to explore topics of concern without the restrictions of curriculum or evaluation needs.

Hence students, the clients of the system, reaffirm what the social observers have been noting for some time: our educational institutions are failing in a critical area.

What can be done? Organizational changes are slow in coming, for the gears of a bureaucracy grind slowly (except when rifles or tear gas appear). It seems curious that sociologists fail to take their own criticisms to heart. In the one area where most of us have sufficient power to be innovative--in the classroom--we still tend to continue to swamp students with meaningless information. Perhaps we are deluded by the fact that as sociologists, we are able to bring topics filled with immediacy into almost any course. Yet at the same time, the learning environment continues to be barren. We admit to using mediocre texts because "they are there." There is a tendency to teach courses in the manner that we had been taught as students, even though we disliked the format at the time. And we continue to devise tests of obviously limited validity because "students have to be graded."

Many find ways to break out of the evaluator role. Friedland (1969) has described one attempt to make undergraduate social methodology more meaningful. His summer seminar was very unstructured; he used minimal evaluation, student-initiated problems, and a teacher-as-coach technique. Similarly, Boocock (1970) has shown how extensive use of group projects and simulation games provided motivational impact in large urban sociology and social psychology courses.

This paper reports on a different, more extreme innovation in the undergraduate curriculum: a cross-disciplinary non-course. A portion

of the description is necessarily personalized, because as participant-observer in an authority role, many of this writer's perceptions and attitudes directly shaped the development of the course organization.

History of the Course Structure

The course originated when a senior undergraduate approached me several weeks before the start of second semester with most of the plan completed. Entitled "Research and Its Relevance to Society," the class would consist of lecturers from throughout the university who would be invited to discuss their field with regard to social issues. The dean had approved the course provided that a sponsoring department could be located. I agreed to manage the course and readily obtained approval from the department chairman.

My initial interest in the course was simply that it appealed to my dilettantism to hear speakers from a variety of disciplines. This commitment rapidly changed as publicity aroused student interest. The student organizer flooded the campus with psychedelic posters. The college newspaper interviewed me and provided special coverage, which included:

> Dr. Stoll stressed that it is "very easy to get caught up in your own specialty" and that this will be "one of the few opportunities to communicate as citizens with the people who are providing basic information. . . that the courses would be useful for "anyone who's interested in the real world." Not only would it attack . . . the information lag between research trends and their comprehension by students outside the area, it would allow faculty members to discuss areas of their own recent work without having to fit it into a specific course. There are no prerequisites or size limits and enrollment is encouraged.

A class of about seventy students appeared the first day. I then closed enrollment, although it was a futile attempt to have the class small enough to have discussion with the speaker.

Actually, in spite of the grandiose course description, and even though I was the "teacher," I really had no idea what the course would be like. Thus, my first appearance before the class was to behave as a teacher and mention required outside readings, as well as the expectation of required written assignments and tests. However, my experience with the rhetoric of educational innovations also led me to exhort the class to take full advantage of dialogue with the speaker. To paraphrase my remarks at the time: "The real learning experience here will be in the classroom through your interchange with the expert, not from memorizations of lectures and reading." Chart 1 summarizes the disciplines and topics actually covered in the course in order of their appearance.

At first it seemed likely that my role as faculty sponsor should involve the following: introduce the speaker, moderate discussion, raise questions at embarrassing pauses, and serve as a running commentator to integrate the diverse materials. (I suspected that a sociology of science framework would serve well in the last instance.) Even this minimal involvement was soon eliminated for various reasons. One was personal--I felt uncomfortable introducing a speaker I did not know. Second, the class discussion the first day was so animated that my only intervention was to state that we had passed the class time limit. Finally, I was troubled by my desire to provide closure to the course in

CHART 1

Speakers' Disciplines and Themes of Lectures

1. Psychology	Definitions of applied-basic research; report on speaker's own studies of marijuana use.
2. Chemical Biology	Review of research on the chemistry and biology of the brain as related to the planned increase in human mental capacity.
3. Biology*	The formal and political organization of scientific agencies in the federal government; grantsmanship; the population problem.
4. Education	College admissions policies; achievement tests; college education for minority groups.
5. Geography	The ecology of the Potomac River as an illustration of problems in environmental engineering.
6. Computer Science	History of computers and their potential effects upon society.
7. Anthropology	Issues in government-sponsored applied anthropology illustrated through the speaker's own work with an African tribe.
8. English	Problems with humanities today--narrowness, overspecialization, inhumaneness. Restructuring university education.
9. Psychiatry	Psychedelic drugs and their therapeutic uses.
10. Electrical Engineering	New curricula to bridge the science-humanities gap. Survey of systems analysis and its applications in many fields.
11. Psychology-Pediatrics	Sex defects, gender change, and research on sensitive topics. Eugenics.
12. Philosophy of Science (two speakers)	Debate as to whether emphasis upon 'relevant' research will destroy the unique features of the university.

*This speaker was William McElroy, who was appointed to head the National Science Foundation within days following his talk, thus adding stature to his remarks on granting agencies and social issues.

the form of a sociologist's view of things. The fact that I refrained from commenting on such things as the power structures of granting agencies or role conflict of scientists introduced the unique characteristic of the course. The class was student-initiated and became student moderated. By the third class I sat unheard-from in the back of the room. My communications to the class as a whole came in the form of "R & R Newsletter," a mimeographed announcement.

The decision as to how to evaluate students was the most troublesome decision I faced. It meant a careful examination of the notion of evaluation in light of various criticisms. By the third week I moved from traditional expectations--tests, well-limited paper, required reading--to atypical ones. At this point the course standards were defined explicitly in hopes of maximizing individual learning experiences, not constraining them. The following standards were presented to the class.

1. Attendance was compulsory and would account for about 40% of the grade. This restriction was set on two assumptions. First, the expectation had already been established that the learning was to come about in the classroom, not from outside through readings. Second, my background in deviant behavior theory led me to believe that however well-motivated a person is to perform, a minimal structural restraint is a valuable back-up for performance.
2. There would be no exams.
3. None of the readings were required.

4. Most students in the course would receive at least a B.
5. Besides attendance, there would be two papers as a basis for grading.

It was several more weeks into the course before the structure for the papers was determined. Some type of project seemed necessary, not so much for grading purposes, but to encourage the students to integrate the diverse topics and themes of the lectures. The advantage of doing this through a formal assignment is that it is possible to receive feedback on work, presumably from an expert. One problem with the course, naturally, was that the faculty sponsor was not really an expert on the issues at hand. The solution was to provide a wide variety of options in the type of project that could be done along with minimal grading breakdown. Summaries of two of the types of problems a student could address are presented in Chart 2. However, it was emphasized that <u>any</u> treatment of course material could be acceptable. The style of communication was in no way restricted to the essay/term-paper format; there was also an option to work in groups. Grading was as follows:

++ You told me something original and presented your arguments with skill.

\+ Good points, but not as well developed or provocative as ++ papers.

\- I didn't get anything from this paper and neither did you.

Thus grading was used to give the student an idea of how well he was dealing with the material compared to his fellow students. (Anyone

CHART 2

Sample Problems for Term Assignments

1. The speakers and readings quite appropriately focus upon the meaning of their work and their fields for Society as a Whole, the Future, and Mankind. But you are individuals with present-day problems. Perhaps it is because of man's remarkable ability to cope with immediate daily matters that he can ever concern himself with the larger issues. Most of you are rather powerless to have a decision-making role in population growth, the Potomac River, and so forth. How, if at all, have the course materials provided insights on your perceptions of the "social problems," whatever they may be for you, in Hopkins at present? . . . Can you understand the situation any better now? Are there feasible solutions? Which are in your power to effect, if any?

2. You are somewhat of a madman. You are also Ruler of the World, a benevolent despot. You wonder at mankind's apparent inexorable determination for self-destruction. You can live with this eventuality but want to make life "as livable as possible for as many as possible" in the time left. You decide to imprison some speakers from the course (or essayists from the readings) for three days to give you (1) a list of priorities for five basic problems to be attacked, (2) mention of problems that can be ignored, (3) feasible soluations--remember you are the final source of power--no U.S. bureaucracy.

who received a minus grade was also encouraged to submit another paper. Minus grades, in effect, counted as "no assignment" when it came to calculating the final grade, which was based upon the number of plusses earned.)

To summarize, Research and Its Relevance was innovative beyond the fact that its content was cross-disciplinary and policy-oriented. There was no one individual responsible for providing continuity to the material. Evaluation was treated as a reward for performance, and the definition of acceptable performance was broadly defined. The only required exposure to an established source of information was attendance at lectures. Finally, there was no predetermined objective. Each student could set up his own objective, which might be intellectual acquaintance with various scientific endeavors, or the development of a personal commitment to the solution of a societal problem.

Student Performance: Observer's Perceptions

Given this very unorganized course, what happened to the students? This section will report on my perceptions of the course as it developed. At the beginning even I (along with some cynical colleagues) could not help feeling (1) that most of the class was seeking an "easy B;" (2) that students could just as well be reading portions of Saturday Review or Scientific American; and (3) that, at best, they would have unsophisticated answers to pressing problems (such as, "education will cure everything").

The first dent in my cynicism resulted from a combination of unplanned characteristics. First, class discussion continued at the remarkable pace set the first week. A core group of about one-fourth of the class appeared ready to engage every speaker. Many of these students seemed skillful at drawing out a range of topics, often linking the lecture to previous ones in the course. In one sense the "teacher" for the course consisted of this active group's commentary or probings of the lecturer. As a very rough estimate, perhaps fifteen percent of the class, at a maximum, was typically disengaged in reading, sleeping, or writing. (In fact, I learned to measure a speaker's popularity by engagement rates. Some held virtually the entire class's attention; quite a feat in a room of seventy people.)

Another uncontrolled characteristic of the course was the almost consistent excellence of the speakers. All of them prepared lectures specifically for the class. Most were facile at presenting technical information to a lay audience. Indeed the one unanimously unpopular speaker was criticized (on the final evaluation questionnaire) for failure to listen and communicate. There was clearly observable differences in the way the few less popular speakers behaved. For example, the answer to a question would be directed only at the interrogator, not to the class as a whole. Or answers would drag on in spite of furious signs for attention from other students. (In other words, a few public speaking tricks might have cured these speakers' problems.)

One feature of class behavior disturbed me considerably the first time it occurred. At one lecture the students began to leave one after

another, well before the close of class. Their departures were hardly stealthy. Indeed, there appeared to be a ritual involved, a collective bravado, with one student arising soon after the crunch of the door's closing behind another. My first reaction was to be furious over the lack of respect for a fellow faculty member; much of the subsequent two days' time was spent trying to glean advice from colleagues on the "appropriate reaction" to this behavior. They were similarly indignant. In the end I did nothing about it. I happened to learn, quite accidentally, that it was an informal norm at the school to walk out on poor speakers. Also, the fact was that the speaker had been unresponsive and self-indulgent. Perhaps most importantly, spring vacation intervened to cool my ire. There was never again an exodus of this type, but I learned to expect smaller variations of the ritual in later classes.

It is less simple to make objective descriptions of class performance on written assignments. On the one hand, the level of work exceeded my expectations. For instance, while I expected to give perhaps one-fourth of the class the highest grade (++), in fact half the class received it. The problem with this evidence is that I was convinced of the value of the course by the time grading was done. It is notable that students did break from traditional forms of communication and submitted as part of their responses poems, satirical essays, taped discussions, photographs, and even an oil painting. The first set of assignments so pleased me that I placed them on reserve for browsing by the class. (Grades and comments were provided in private notes to each student.)

To be sure, a number of papers were perfunctorily written. In several cases I suspected plagiarism. (Given the wide range of expression and topics permitted by the assignments, it would be relatively easy to steal an article from some volume of essays.) An inconsistency was unbared: it seemed necessary to trade off certainty of academic honesty to encourage individually-motivated learning. To complicate matters, to the extent that dishonesty did occur, the grading system was unreliable. The meaning of this latter ramification for the students was not apparent to me until the end of the course, and I was willing to make the trade-off.

A final proof of class involvement came late in the course. Most aptly, two history of science professors wanted to argue that relevance would ruin the university and they asked the class to submit definitions of relevance. Though told that submitting an answer would be a meagre addition to the grade, most students responded. (Not surprisingly, by late in the course we realized that "relevance" is one of those vague catch-words akin to the way "conformity" was used in the fifties.) Again, the responses displayed evidence of thought and consideration of the issue, and few were obviously last-minute compositions.

Student Evaluation Responses

To this point the descriptions have been influenced by my role as a decision-maker determining the shape and structure of the course, and as an individual committed to educational innovations. Throughout the course I remained assiduously in the background, interacting directly

with few students. I purposely responded with vagueness when pressed with the question "what do you want from us?"

On the last day of class an evaluation questionnaire on the course and its effects was administered to the students. A group interview followed. Only a sketch of the results is presented here. (An analysis of individual variations and reactions is presented in Stoll, 1970.) A total of fifty-eight completed questionnaires (89% of the class) was used for the analysis.

The course had clearly been popular. About one-third of the class listed it as their favorite course of the semester, in contrast to only five percent who found it their least favorite. Given that students averaged four or five courses, the proportion giving it a first place is unusual, particularly because it means they preferred the course to their major subject courses.

Although no readings were required, students reported having read in entirety an average of 1.67 books from the list of six suggested readings.[2] In addition, an average of 1.6 additional books were read in part or browsed through. The quality of the books may have been important here in producing the voluntary effort, because students who read a book generally recommended that it be kept on the next year's reading list. The moral seems to be that students will read good books without the weight of a requirement.[3] In addition, about three-fourths of the class had read some of the student papers placed on reserve for browsing.

One question proposed a list of possible changes. These alternatives and the proportion of the class selecting them are shown in Table 1. The surprise for me was that none of the changes received a majority vote. The interest in discussion groups (36 percent) was expected because a class size of 70 had clearly prevented many people from entering into a dialogue. However, fewer suggested removing the attendance requirement (20 percent) or having the faculty sponsor act as a moderator (20 percent). (In retrospect, it seems that by intervening as a moderator, the problems of class disinterest with several speakers would have been ameliorated.) Also, some students wanted more structure in the way of required reading (24 percent) or a course theme (24 percent). And, few students disapproved of the written assignments (5 percent). Yet the most popular change was to run the course totally on a pass-fail basis (39 percent). Thus evaluation, not requirements, continued to be defective.

There were other indications that the traditional letter-grade reward system was a problem. Though students were told that the average would be a B, and though there were simple, obvious opportunities to maximize the grade (e.g., attendance, hand in all papers, rewrite a poor paper), half the class admitted to being "very worried or concerned" about their grade during the course.

Why the anxiety about grades? One possibility was that my grading was unreliable, erratic, indeed incompetent. Objectively, it may have been, but 79 percent of the class felt that the grades received on

TABLE 1

Recommended Changes in Course Structure*

Change	Proportion (N=58)
Drop attendance requirement	20
Structure lectures more around a theme	24
Add small group discussions	36
Have required reading	24
Have tests or an exam	2
Change course to pass-fail for everyone	39
Eliminate papers	5
Have faculty sponsor act more as a moderator	20
No changes should be made	8

*There was no restriction on the number of recommendations that could be elected.

written work had matched their own evaluation of it. Furthermore, an additional 14 percent felt that their grade had been higher than they deserved.

The source of the anxiety is suggested in other less exact evidence. First, it happens that the average grade point in the class was a B+, with the distribution skewed toward the A end. Hence, the class was composed of high-achieving students. While students had been encouraged to register under a "pass-fail" option (which most could do under university regulations) only 10 percent did so. Finally, the academic climate at the school is apparently very competitive. When I asked one student why there was so much concern over the difference of an A and a B, he said, "An A gets you a 4-point." Apparently what happened, then, is that the class was composed of those who were most imprisoned by the grading system.

Having learned that the class was so selected, another curious behavior on the part of students was better understood. Specifically, I had been struck by unsolicited comments--both in person, and on the questionnaire--that fellow students in the course were cheating, committing forgery on the sign-ups, and were dastardly fellows in general. Although some dishonesty surely occurred, its perception seemed high compared to its probable prevalence. The disturbing part of these perceptions is that students were expressing alienation from one another. If evaluation and competition procedures are at all responsible for this alienation, then the course lacked a potentially strong source of learning: it failed to involve the peer environment.[4]

One other issue arose during the discussion with students: the lack of structure was anxiety-provoking for some students to such a point that they had become virtually paralyzed when it came to starting the written assignments. As one student explained,

> Not being used to such a great amount of freedom in a course, I was somewhat reluctant to make use of it. Too often, after espousing great liberalism in approaches to a course, an instructor has fallen back on the Chinese Restaurant Syndrome--two from column A and one from column B.

This student apparently could not trust my word that I hold no strong biases concerning either the content or format of projects, and that I would not punish him for creativity.

A small minority of the class found the openness of the course structure threatening, but virtually everyone felt uneasy at the end of the course because <u>they couldn't state what they had learned in specific terms</u>. When asked to explain what they had learned, explanations often made reference to personal feelings, attitudes, and experiences:

> The overview provided . . . of the nature and function of the university . . . sent me on an "intellectual trip."
>
> I have begun to think a lot more about other groups of people and the problems we face together.
>
> I have not so much learned as become <u>aware</u> of the meaning of relevance and its vital attachment to my daily life.
>
> The most important thing . . . was not the information made available to me, but the thoughts it sent me on . . . Without a doubt this course broadened my mind more than any other I have taken.
>
> Some of the problems facing mankind have become so great that crisis-oriented problem solving will not be sufficient . . . Today the things getting out of control relate directly to the survival of the species. An ugly thought, but the course seems particularly worthwhile for making it clear.

> I gained an inkling of the tremendous gap between man's rapidly advancing technology as it surpasses man's moral thinking . . . the lag of humanitarian ideas and values.
>
> Although I did learn a lot, it's not exactly the kind of learning you can summarize and present eloquently for someone to read.

My own reaction was similar: The course had been captivating. Almost every lecture directly shaped some part of my professional work. But the course also had profound effects on my personal attitudes. So I join my students to say that "something happened," but it is not clearly measurable. This is a most embarrassing position for a hard-nosed empiricist to take.[5]

Taking both student and instructor evaluations together, one generalization emerges. Namely, even though the participants in an innovative setting agree with the principles of change, their participation is accompanied by personal discomfort. Most of the students desired a loosely-structured learning environment, yet found it difficult at times to work without having clear objectives preestablished by the instructor. Similarly, as decision-maker I had little more than ideology to support my actions. Both the students and I had experienced too many years of a very different classroom experience not to feel that the present experience was somehow less valid.

One other source of student evaluation appeared the following fall when the Student Course Guide was published. This guide is based upon a student-designed and administered survey. Forty-one members of the class responded. On the basis of these responses the following evaluation was composed by the Course Guide editors:

> Hopkins' first student sponsored and administered course received widespread acclaim both for its ground-breaking approach and well-structured format. Lectures ranging through fourteen departments provided diverse penetrating comparisons within a basic continuity of university processes. The motif, informal and informative, offered the rare opportunity on this campus of genuine questioning. Grading was negligible. Attendance was mandatory but two short papers allowed liberal personal interpretation stressing creativity.

This appears to be an appropriate precis of the experience.

Student Perception of the University

A major theme during class dialogue with faculty was criticism of the American university today as an institution incapable of meeting student needs. In this section I will indicate some of the prevalent attitudes, because they suggest interpretations as to why students felt that this course had been valuable.

First, students repeatedly referred to the excessive segregation of professional disciplines as the basis for narrowness, provincialism, and misplaced emphasis in the typical college course. They labeled Research and Its Relevance as cross-disciplinary, not inter-disciplinary. That is, they felt it important that the course had not been a compromise designed by a committee of professors from various disciplines. Typically interdisciplinary courses require students to learn fragmented bits of knowledge from each discipline. In a cross-disciplinary course, the students are free to integrate materials from their own perspective.

Related to the outcry against specialization was the demand for education in a total sense. The consensus was that colleges are eminently successful at instruction--preparation for wage-earning activities.

Where colleges fail is at education--preparing people for life as members of society. Research and Its Relevance was viewed as a course aimed at education in the classical sense because its content provoked moral thought and personal commitments to real-life problems.

A third issue that students raised was that education emphasizes freedom, including the freedom to make mistakes. Thus a recurrent recommendation was that the faculty should be more willing to serve as advisors and guides to learning, rather than act as sources of specific knowledge. This suggestion relates to the ideology of "doing your own thing." But as one student explained to me, "Doing your own thing is not tunnel vision. Rather, it refers to the opportunity to explore a topic from various perspectives, something not very likely in a specialized world where there is so much competition for one's time."

Perhaps most interesting, by the end of the course it became apparent to all of us that the humanities are no more successful at "education for citizenship" than the sciences. The theory of the "two cultures" appears to be specious, at least in the university where there is only one culture: specialized, analytic, and amoral in character.

What the case suggests, then, is not a total revision of instructional aims and methods. It implies rather that we introduce additional types of learning environments into the undergraduate curriculum. The opportunities would permit students, first, to synthesize knowledge

from instructional or technical courses, and second, to apply this knowledge in view of their own special real-life situations.

As faculty members there are many ways in which we can initiate responses to student needs. We can work on university committees, try new techniques in our classrooms, and act upon student suggestions for curriculum revision.[6] As social scientists we, more than anyone else in the university, should be able both to originate suggestions for change and evaluate their likely effectiveness. Some of our decisions will be wrong. However, if we do abdicate responsbility to participate in the random and planned changes which are occurring, then we have no right to tearful post-hoc analyses when the new order has arrived.

FOOTNOTES

[1]Moore and Anderson (1969) have made criticisms similar to Boocock and Coleman. Their paper is further valuable for its careful discussion of practical techniques for improving the learning value of educational environments. Tuckman's (1969) paper describes the principles of a student-centered curriculum for college students.

[2]These means may appear low, however they assume opportunity to all six books. In fact, only twenty-five copies of each book were ordered and students were forced to borrow from one another. Also this count does not include follow-up reading from bibliographies provided by speakers. That this occurred was evident in references listed in project assignments.

[3]These books were Boulding (1964), Fabun (1968), Platt (1966), Smithsonian Institute (1966), and two issues of Daedulus (1965; 1967).

[4]Only two sets of students submitted group projects for the first assignment, and only three on the second. I do not debate that peer learning does occur in individually-competitive courses, for example, in the form of cram sessions. Because each individual is judged ultimately against the other, a freely-expressive exchange of ideas is unlikely. Furthermore, there is no motivation to create a group product superior to any individual one.

[5]Michael Inbar has suggested that, given the effects on self-image and moral judgments, the course provided a socialization function. If this is true, then the measurement issue is not so problematic.

[6]Colleagues at other schools have told me how a course of this type would be impossible for administrative reasons. In one school, lengthy and ponderous course outlines must be submitted to a faculty committee for approval. A year may intervene before final decision, and approval is not a frequent outcome. At another school the dean of the college applies subtle pressures to faculty members who are "weak" with students; i.e., have broad objectives, open-book exams, casual class decorum. A third person has told me how his chairman does not permit courses not labelled by a well-accepted sociological specialty; e.g., "Poverty" is unacceptable. These restrictions strike me as being just as limiting in academic freedom as more blatant notorious attempts to control the content of what one presents in the classroom.

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